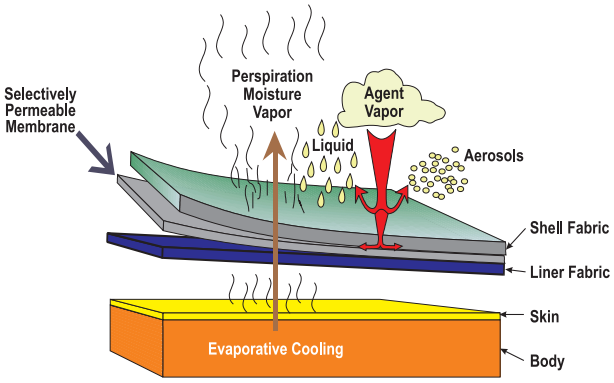
Advanced Lightweight Chemical/ Biological Duty Uniform (CBDU) Based on the Use of Selectively Permeable Membranes

Current Clothing Systems:

Protective clothing with activated carbon technologies has been reliably protecting troops since World War I. While improvements have been made the core principles for this protection remain the same but ongoing concern for future threats and the changing battlefield environment compel the Joint Services to continually augment, investigate and develop alternative technologies for enhancing individual protection.

Advanced Clothing Systems:

Natick Soldier Center (NSC) is an important contributor to the mission of protecting our troops. A good example for our efforts would be **Selectively Permeable Membranes (SPM)**. This pioneering and innovative technology — a one-piece suit, with a special closure system — provides potential increased individual protection at a reduced bulk and weight with a more effective barrier to hostile environmental conditions. This new technology allows selective permeation of moisture vapor while preventing the passage of chemical and biological warfare agents. NSC also seeks to facilitate a new generation of self-deactivating and elastomeric protective materials based on SPM technologies. SPM-based products are actively being considered in the Joint Service Protective Aircrew Ensemble (JPACE) and JSLIST Alternative Source Qualification (JASQ) programs. SPM-based clothing is launderable, is lighter than current over-garments, is more comfortable and has reduced package volume that reduces the logistics burden.



By partnering the effort with industry NSC leverages the developmental effort and insures the viability of these materials for future products. The overall cost of a SPM based clothing system is expected to be comparable to current clothing systems. SPM may find their way into other product improvements for items such as butyl rubber boots and gloves, and products similar to OHSA approved Level B and C suits. NSC has current efforts through the Dual Use Science and Technology (DUST) Program and the Weapon of Mass Destruction Civil Service Response (WMDCSR) program to help expand consideration of SPM technology to medical, agricultural, industrial chemical, and law enforcement applications.

Point of Contact:

Individual Protection Liaison
COMM: (508) 233-6481, DSN: 256-6481
E-Mail: amssb-rip@natick.army.mil

U.S. Army
Soldier and Biological Chemical Command

Soldier Systems Center
Kansas Street
Natick, Massachusetts
01760
www.sbccom.army.mil

rev 11-21-02